ABSTRACTS

Policy Research Working Paper Series

Numbers 3469–3539

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The World Bank
Research Support Team
Development Economics
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1. **Prepare a 250 word abstract.** The abstract should set out the main questions addressed in the paper and the key findings, putting them (if appropriate) in the context of the relevant literature. For empirical papers, briefly describe the data, including such details as the period covered, the countries or country groups included, the size of the sample, and the type of survey, as appropriate. ***The abstract will be published as submitted.*** To ensure maximum impact for your work, consult existing working paper abstracts and test your abstract by asking a colleague who is not familiar with the paper to read it before submission.

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Produced by the Research Support Team

Policy Research Working Paper Series

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3469. Regulation and Macroeconomic Performance

Norman V. Loayza, Ana María Oviedo, and Luis Servén
(January 2005)

Regulation is purportedly enacted to serve specific social purposes. In reality, however, it follows a more complex political economy process, where legitimate social goals are mixed with the objectives of particular interest groups. Whatever its justification and objectives, regulation can have potentially significant macroeconomic consequences by helping or hampering the dynamics of economic restructuring and resource reallocation that underlie the growth process. Loayza, Oviedo, and Servén provide an empirical analysis of the macroeconomic impact of regulation. They first characterize the stylized facts on regulation across the world using a set of newly constructed, comprehensive indicators of regulation in a large number of countries in the 1990s. Using these indicators, the authors study the effects of regulation on economic growth and macroeconomic volatility using cross-country regression analysis. In particular, they consider whether the effects of regulation are affected by the country's level of institutional development. Finally, their analysis controls for the likely endogeneity of regulation with respect to macroeconomic performance. The authors conclude that a heavier regulatory burden reduces growth and increases volatility, although these effects are smaller the higher the quality of the overall institutional framework.

This paper—a product of the Growth and Investment Team, Development Research Group—is part of a larger effort in the group to understand the process of economic reform. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tourya Tourougui, mail stop MC3-301, telephone 202-458-7431, fax 202-522-3518, email address ttourougui@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at nloayza@worldbank.org or lserven@worldbank.org. (44 pages)

3470. PPI Partnerships versus PPI Divorces in Developing Countries (Or are We Switching from PPPI to PPDI?)

Antonio Estache
(January 2005)

Thirty years ago, in 1974, Chile launched the first large-scale privatization in a developing country. About 15 years later, Argentina provided a new model of global infrastructure management. Since then a variety of public-private partnerships in infrastructure have been adopted throughout the developing and transition world. These experiences add up to a large and heterogeneous enough sample of experiences from which some fairly robust conclusions on who benefited from the reforms and who did not. Because many of these experiences are also turning sour and the "privatization" fad of the 1990s seems to be turning into an "antiprivatization" fad, it seems important to separate facts from emotions. Estache argues that the wide differences in interpretations of the facts can be explained by wide differences in the assessment criteria used by analysts, including the definition of the baseline data chosen to assess the incremental effect of reforms. It is also driven by the sectors, the regions, and probably most important, the actors on which the analysis tends to focus. Once all these factors have been considered, a relatively fair and quantitative assessment of the prospects of the public-private relationship in infrastructure is possible.

This paper—a product of the Office of the Vice President, Infrastructure Network—is part of a larger effort in the network to stimulate a debate on the effectiveness of infrastructure reforms. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Antonio Estache, room H3-145, telephone 202-458-1442, fax 202-522-2461, email address aestache@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. (20 pages)

3471. Do Government Policies that Promote Competition Encourage or Discourage New Product and Process Development in Low and Middle-Income Countries?

George R. G. Clarke
(January 2005)

Previous work has shown that firms in low and middle-income countries in Eastern Europe and Central Asia that feel greater pressure to innovate from their competitors are more likely to introduce new products and services than firms that do not feel pressure (Carlin and others 2001; World Bank 2004). However, competition also appears to affect innovation in other ways. In particular, firms in these countries that face greater price competition appear to be less likely to innovate than other firms (Carlin and others 2001). Clarke assesses how competition and trade policy affect these different aspects of competition and, consequently, assesses their net impact on innovation. He finds that reducing tariffs and enacting and enforcing competition laws modestly increases both the pressure that firms feel regarding innovation and the level of price competition in the domestic economy. The net impact that lower tariffs have on new product and process development appears to be negative but small—for the most part the opposing effects cancel out. In contrast, stricter competition laws and better enforcement of those laws appear to increase the likelihood of new product and process development, especially when competition is treated as endogenous to innovation.

This paper—a product of the Growth and Investment Team, Development Research Group—is part of a larger effort in the group to understand the determinants of competition. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, mail stop MC3-300, telephone 202-473-7644, fax 202-522-1155, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at gclarke@worldbank.org. (41 pages)

3472. Democracy, Credibility, and Clientelism

Philip Keefer and Razvan Vlaicu
(January 2005)

Keefer and Vlaicu demonstrate that sharply different policy choices across democracies can be explained as a consequence of differences in the ability of political competitors to make credible preelectoral commitments to voters. Politicians can overcome their credibility deficit in two ways. First, they can build reputations. This requires that they fulfill preconditions that in practice are costly—informing voters of their promises, tracking those promises, and ensuring that voters turn out on election day. Alternatively, they can rely on intermediaries—patrons—who are already able to make credible commitments to their clients. Endogenizing credibility in this way, the authors find that targeted transfers and corruption are higher and public good provision lower than in democracies in which political competitors can make credible pre-electoral promises. They also argue that in the absence of political credibility, political reliance on patrons enhances welfare in the short run, in contrast to the traditional view that clientelism in politics is a source of significant policy distortion. However, in the long run reliance on patrons may undermine the emergence of credible political parties. The model helps to explain several puzzles. For example, public investment and corruption are higher in young democracies than old; and democratizing reforms succeeded remarkably in Victorian England, in contrast to the more difficult experiences of many democratizing countries, such as the Dominican Republic.

This paper—a product of the Growth and Investment Team, Development Research Group—is part of a larger effort in the group to investigate the political economy of development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-7644, fax 202-522-1155, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Philip Keefer may be contacted at pkeefer@worldbank.org. (45 pages)

3473. Poverty Effects of Russia's WTO Accession: Modeling "Real" Households and Endogenous Productivity Effects

Thomas Rutherford, David Tarr, and Oleksandr Shepotylo
(January 2005)

Rutherford, Tarr, and Shepotylo use a computable general equilibrium comparative static model of the Russian economy to assess the impact of accession to the World Trade Organization (WTO) on income distribution and the poor. Their model is innovative in that they incorporate all 55,000 households from the Russian Household Budget Survey as "real" households in the model. This is accomplished because they develop a new algorithm for solving general equilibrium models with a large number of agents. In addition, they include foreign direct investment and Dixit-Stiglitz endogenous productivity effects in their trade and poverty analysis. In the medium term, the authors find that virtually all households gain from Russian WTO accession, with 99.9 percent of the estimated gains falling within a range between 2 and 25 percent increases in household income. They show that their estimates are decisively affected by liberalization of barriers against foreign direct investment in business services sectors and endogenous productivity effects in business services and goods. The authors use their integrated model to assess the error associated with a "top down" approach to micro-simulation. They find that approximation errors introduced by failing to account for income effects in the conventional sequential approach are very small. However, data reconciliation between the national accounts and the household budget survey is important to the results. Despite the estimated gains for virtually all households in the medium term, many households may lose in the short term because of the costs of transition. So, safety nets are crucial for the poorest members of society during the transition.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to assess the impact of trade on poverty. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-7274, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at rutherford@colorado.edu, dtarr@worldbank.org, or oshepotylo@worldbank.org. (64 pages)

3474. Choosing Formulas for Market Access Negotiation: Efficiency and Market Access Considerations

Joseph François, Will Martin, and Vlad Manole
(January 2005)

An important issue in multilateral trade negotiations is the approach taken to reduce tariffs. François, Martin, and Manole believe that there are important advantages in formula approaches and survey a range of options between the sharply top-down Swiss formula and proportional cuts in tariffs. Over the range the authors consider, they find that the economic efficiency impacts for the importer are not greatly influenced by the extent to which higher tariffs face bigger cuts. However, top-down approaches appear to be more effective in reducing tariff escalation, and provide greater market access gains to poor countries.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the impact of trade policies on trade performance and development opportunities. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at francois@few.eur.nl, wmartin1@worldbank.org, or vmanole@worldbank.org. (30 pages)

3475. Using an Asset-Based Approach to Identify Drivers of Sustainable Rural Growth and Poverty Reduction in Central America: A Conceptual Framework

Paul B. Siegel
(January 2005)

The asset-based approach considers links between households' productive, social, and locational assets; the policy, institutional, and risk context; household behavior as expressed in livelihood strategies; and well-being outcomes. For sustainable poverty reducing growth, it is critical to examine household asset portfolios and understand how assets interact with the context to influence the selection of livelihood strategies, which in turn determine well-being.

Policy reforms can change the context and income-generating potential of assets. Investments can add new assets or increase the efficiency of existing household assets, and also improve households' risk management capacity to protect assets. After all is said and done, a household's asset portfolio will determine whether growth and poverty reduction can be achieved and sustained over time.

The asset-based framework is amendable to different analytical techniques. Siegel suggests combining quantitative and qualitative spatial and household level analyses (and linked spatial and household level analyses) to deepen understanding of the complex relationships between assets, context, livelihood strategies, and well-being outcomes.

This paper—a joint product of the Environmentally and Socially Sustainable Development Vice Presidency and the Rural Development Family, Latin America and the Caribbean Region—is part of a larger effort in the Bank to strengthen analyses and strategies for rural development, and address policy issues and investment priorities. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Diana Rebolledo, room I6-024, telephone 202-473-9205, email address drebolledo@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at psiegel@worldbank.org. (29 pages)

3476. Firm Financing in India: Recent Trends and Patterns

Inessa Love and Maria Soledad Martinez Peria
(January 2005)

Using balance sheet information for nearly 6,000 firms between 1994–2003, Love and Martinez Peria investigate recent firm financing patterns in India. They document the overall use of debt and, in particular, the role of bank financing (short-term and long-term), trade credit, intra-business group borrowing, and foreign financing. The authors examine financing patterns over time and explore differences across firms by sector, age, ownership type, export orientation, and, in particular, size. In terms of trends, they find that while debt to asset ratios have been relatively stable, nominal debt growth has slowed down in recent years. At the same time, firms' repayment capacity, as measured by the interest coverage ratio, has exhibited a U-shaped pattern falling during 1997–99 and recovering in recent years. Throughout the period of study, bank financing as a share of total debt has increased, while borrowing from nonbank financial institutions fell sharply. In terms of differences across firms, the most robust finding is that debt levels increase with firm size. Smaller firms have especially less debt relative to larger firms if they are young (below 10 years since incorporation), if they are in the manufacturing sector, and if they are located in Southern India. Furthermore, while the ratio of debt to assets has been relatively stable for large firms, the authors observe a significant decline for smaller firms. Overall, the findings presented provide suggestive (but not definite) evidence of stronger credit constraints for smaller firms.

This paper—a product of the Finance Team, Development Research Group—is part of a larger effort in the department to study access to finance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-439, telephone 202-473-1823, fax 202-522-3518, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at ilove@worldbank.org or mmartinezperia@worldbank.org. (67 pages)

3477. Agglomeration, Transport, and Regional Development in Indonesia

Uwe Deichmann, Kai Kaiser. Somik V. Lall, and Zmarak Shalizi
(January 2005)

How effective are public interventions in addressing significant regional disparities in formal manufacturing concentration in a developing economy? Deichmann, Kaiser, Lall, and Shalizi examine the aggregate and sectoral geographic concentration of manufacturing industries for Indonesia, and estimate the impact of factors influencing location choice at the firm level. They distinguish between *natural advantage,* including infrastructure endowments, wage rates, and natural resource endowments, and *production externalities,* arising from the co-location of firms in the same or complementary industries. The methodology pays special attention to empirically distinguishing the impact of measured production externalities from unobserved local characteristics. Depending on the sector, the authors find that a mix of both forms of regional advantage explains the geographic distribution of firms. Based on the estimated location choice model, they illustrate the potential impacts of policy interventions on manufacturing distribution by simulating the effectiveness of transport improvements on relocation of firms. The findings suggest that improvements in transport infrastructure may only have limited effects in attracting industry to secondary industrial centers outside of Java, especially in sectors already established in leading regions. The findings underscore the challenges for addressing the industrial fortunes of lagging regions, either through local decentralized policy interventions or national policies focused on infrastructure development.

This paper—a product of the Infrastructure and Environment Team, Development Research Group—is part of a larger effort in the group to examine the impacts of spatial policy interventions on the location and performance of economic activity. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Viktor Soukhanov, room MC2-523, telephone 202-473-5721, fax 202-522-3230, email address vsoukhanov@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Somik Lall may be contacted at slall1@worldbank.org. (39 pages) part of a larger effort in the group to understand the growth finance link. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mani Jandu, room MC3-456, telephone 202-473-3103, fax 202-522-1155, email address mjandu@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at tbeck@worldbank.org, ademirguckunt@worldbank.org, or llaeven@worldbank.org. (37 pages)

3486. Localization and Corruption: Panacea or Pandora's Box?

Tugrul Gurgur and Anwar Shah
(January 2005)

An extensive literature on the relationship between decentralization (or localization) and corruption has developed in recent years. While some authors argue that there is a positive relationship between decentralization and corruption, others claim that decentralization in fact leads to a reduction in the level of corruption. This important policy question has not yet been laid to rest since previous empirical work simply uses eclectic regressions and lacks a conceptual framework to discover the root causes of corruption. Gurgur and Shah attempt to fill this void by presenting a framework in identifying the drivers of corruption both conceptually and empirically to isolate the role of centralized decisionmaking on corruption. The following results emerge:

- For a sample of 30 countries (developing and industrial), corruption is caused by a lack of service orientation in the public sector, weak democratic institutions, economic isolation (closed economy), colonial past, internal bureaucratic controls, and centralized decisionmaking.
- Decentralization is found to have a negative impact on corruption, with the effect being stronger in unitary than in federal countries.

This paper—a product of the Poverty Reduction and Economic Management Division, World Bank Institute—is part of a larger effort in the institute to exchange ideas on the reform of public sector governance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Diane Billups, room J4-259, telephone 202-473-5818, fax 202-676-9810, email address dbillups@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Anwar Shah may be contacted at ashah@worldbank.org. (34 pages)

3487. Child Labor, School Attendance, and Indigenous Households: Evidence from Mexico

Rosangela Bando, Luis F. Lopez-Calva, and Harry Anthony Patrinos
(January 2005)

The authors use panel data for Mexico for 1997 to 1999 to test several assumptions regarding the impact of a conditional cash transfer program on child labor, emphasizing the differential impact on indigenous households. Using data from the conditional cash transfer program in Mexico—PROGRESA (OPORTUNIDADES)—they investigate the interaction between child labor and indigenous households. While indigenous children had a greater probability of working in 1997, this probability is reversed after treatment in the program. Indigenous children also had lower school attainment compared with Spanish-speaking or bilingual children. After the program, school attainment among indigenous children increased, reducing the gap.

This paper—a product of the Education Sector Unit, Latin America and the Caribbean Region—is part of a larger effort in the region to evaluate human development programs. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Maria Colchao, room I7-162, telephone 202-473-8048, fax 202-522-3135, email address mcolchao@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Harry Patrinos may be contacted at hpatrinos@worldbank.org. (44 pages)

3488. Well-Being during a Time of Change: Timor-Leste on the Path to Independence

Kaspar Richter
(January 2005)

Countries undergoing fundamental economic and political transformations might experience differential adjustments in material well-being and empowerment. Richter evaluates self-rated welfare and power changes in Timor-Leste covering the period prior to the 1999 referendum on independence from Indonesia to the eve of independence in end 2001. Drawing on the first nationally representative household survey and village census, he shows how subjective, objective, and recall information can be combined to provide a rich profile of trends in well-being from the pre- to post-conflict stage. The author's analysis shows that changes in self-rated welfare and power broadly corresponded to changes recorded by objective indicators. While economic well-being improved little, empowerment increased dramatically. The changes were not uniform across the population but some groups benefited more than others. The evidence for Timor-Leste is consistent with these hypotheses:

- Economic resources increase welfare, and more than power.
- Social resources increase power, and more than welfare.
- Welfare winners have low initial economic resources.
- Power winners have high social resources.
- Economic shocks reduce welfare and power, but welfare more than power.

This paper—a product of the Poverty Reduction and Economic Management Sector Unit, East Asia and Pacific Region—is part of a larger effort in the region to promote economic research on small countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tara Mailei, room MC8-128, telephone 202-458-7347, fax 202-522-1560, email address tmailei@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at krichter@worldbank.org. (37 pages)

3489. Environmental Factors and Children's Malnutrition in Ethiopia

Patricia Silva
(January 2005)

Ethiopia has one of the highest child malnutrition rates in the world. A considerable effort to monitor child malnutrition rates over the past two decades shows that, despite some improvements, approximately half of the children under five are still malnourished. Much of the burden of deaths resulting from malnutrition, estimated to be over half of childhood deaths in developing countries, can be attributed to mild or moderate malnutrition. Several biological and social economic factors contribute to malnutrition. Using the 2000 Ethiopia Demographic and Health Survey data, Silva examines the impact of access to basic environmental services, such as water and sanitation, on the probability children are stunted and underweight. She focuses on the impact of externalities associated with access to these services. The author finds that biological factors (such as child's age and mother's height) and social economic factors (such as household wealth and mother's education) are important determinants of a child's nutritional status. This is consistent with the findings of most studies in the literature. With respect to the environmental factors, the author finds that there are indeed significant externalities associated with access to water and sanitation at the community level. The external impacts at the community level of access to these services are an important determinant of the probability a child is underweight. The results also show that the external impact of access to water is larger for children living in rural areas.

This paper—a product of the Environment Department—is part of a larger effort in the department to understand the linkages between poverty and the environment. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Alexandra Sears, room MC5-206, telephone 202-458-2819, fax 202-522-1735, email address asears@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at psilva@worldbank.org. (33 pages)

3490. Roads Out of Poverty? Assessing the Links between Aid, Public Investment, Growth, and Poverty Reduction

Pierre-Richard Agénor, Nihal Bayraktar, and Karim El Aynaoui
(January 2005)

Agénor, Bayraktar, and El Aynaoui develop a macroeconomic framework that captures links between aid, public investment, growth, and poverty. Public investment is disaggregated into education, infrastructure, and health, and affects both aggregate supply and demand. Dutch disease effects are captured by accounting for changes in the relative price of domestic goods. The authors assess the impact of policy shocks on poverty by linking the model to a household survey. They calibrate the model for Ethiopia and simulate the changes in the allocation of aid and public investment. The authors also calculate the amount by which foreign aid should increase to reach the poverty targets of the Millennium Development Goals.

This paper—a product of Poverty Reduction and Economic Management 2, Africa Technical Families—is part of a larger effort in the region to formulate country-specific growth strategies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Dora Harris, room J10-274, telephone 202-473-4846, fax 202-614-0759, email address daharris@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at pagenor@worldbank.org, nbayraktar@worldbank.org, or kelaynaoui@worldbank.org. (75 pages)

3491. Use of the Formal and Informal Financial Sectors: Does Gender Matter? Empirical Evidence from Rural Bangladesh

Signe-Mary McKernan, Mark M. Pitt, and David Moskowitz
(January 2005)

Access to transfers and credit, whether cash or in-kind, is a major source of poverty alleviation and income generation in many developing countries around the world. Women may especially benefit from transfers and credit in countries such as Bangladesh, where they often have few work alternatives. In this paper, the authors descriptively examine the formal and informal financial sectors of rural Bangladesh, placing special emphasis on differences between men and women. Their analysis uses unique data on the credit and transfer behaviors of 1,800 households in rural Bangladesh. The authors focus on five important questions:

- How important are the formal and informal financial sectors?
- What are the primary sources of gifts and loans within those sectors?
- Do men and women rely on different sources for finances (for example, formal versus informal) or different types of finances (for example, transfers versus loans)?
- How have the financial sectors evolved during the 1990s?
- What is the relationship between the formal and informal sectors?

This paper—a product of the Gender Division, Poverty Reduction and Economic Management Network—is part of a larger effort in the network to integrate gender into economic policy work. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Dawn Ballantyne, room MC4-432, telephone 202-458-7198, fax 202-522-3237, email address dballantyne@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Signe-Mary McKernan may be contacted at smckerna@ui.urban.org. (65 pages)

3492. How Fair is Workfare? Gender, Public Works, and Employment in Rural Ethiopia

Agnes R. Quisumbing and Yisehac Yohannes
(January 2005)

Quisumbing and Yohannes use the Ethiopian Rural Household Survey to examine the gender dimensions of public works. They use three rounds of a panel conducted in 1994–95 to explore the determinants of participation in, days worked, wages, and earnings from wage labor, food-for-work (FFW), and self-employment. Then they analyze public works data collected in 1997, together with program data collected in 2003.

FFW operates in a similar fashion with other labor markets in Ethiopia where female participation is low. Gender differences are important in the participation decision, but operate differently in different types of labor markets. Better-educated women are more likely to participate in the wage labor market, while higher livestock holdings diminish participation more for women. Females with more schooling are also more likely to participate in FFW. Men's and women's paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sarah Lipscomb, room MC4-424, telephone 202-473-3718, fax 202-522-2530, email address economicpolicy@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at eianchovichina@worldbank.org. (56 pages)

3499. Agriculture and National Welfare Around the World: *Causality and International* Heterogeneity since 1960

Claudio Bravo-Ortega and Daniel Lederman
(February 2005)

Calculations of marginal welfare effects suggest that agricultural development has had important positive effects on national welfare, especially in developing countries. Latin American and Caribbean countries have also benefited from agricultural growth, but nonagricultural production has had marginal welfare effects that are greater in magnitude than those provided by agricultural activities. In contrast, the industrialized, high-income countries experienced marginal welfare gains from nonagricultural activities that are much greater than those derived from agriculture, whose impact is actually negative. These calculations of marginal welfare effects across regions depend on econometric estimates of elasticities linking agricultural and nonagricultural economic activities to four elements in a national welfare function: national GDP per capita, average income of the poorest households within countries, environmental outcomes concerning air and water pollution and deforestation, and macroeconomic volatility. The econometric analyses are motivated by theoretical treatments of key issues. The empirical models are estimated with various econometric techniques that deal with issues of causality and international heterogeneity.

This paper—a product of the Office of the Chief Economist, Latin America and the Caribbean Region—is part of a larger effort in the region to study the rural contribution to development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Soto, room I8-081, telephone 202-473-7892, fax 202-522-7528, email address psoto@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Daniel Lederman may be contacted at dlederman@worldbank.org. (50 pages)

3500. Revenue and the Fiscal Impact of Trade Liberalization: The Case of Niger

Ali Zafar
(February 2005)

Using data collected during several missions, Zafar finds that the principal reasons for low revenue mobilization are (1) the adverse fiscal impact of trade liberalization, (2) the defiscalization of agriculture in the 1970s, (3) the collapse of the uranium boom in the 1980s, and (4) the poor record of the VAT in mobilizing revenue. The large reduction in tariffs during the 1980s and 1990s in the context of structural adjustment programs and West African regional integration initiatives had adverse effects on trade tax revenue during the period 1980–2003. But higher import levels after 1994 succeeded in partially mitigating the revenue losses. The experience of Niger shows that without accompanying macroeconomic policies, parallel improvements in tax and customs administration, and success in mobilizing domestic taxes, most notably the VAT, trade reform can have adverse fiscal consequences.

Using a SMART model partial equilibrium analysis developed by UNCTAD for researchers and negotiators at multilateral trade rounds, the author simulated three different tariff shocks to test the fiscal and trade implications of additional trade liberalization in Niger. First, the preferred tariff regime in terms of overall fiscal and job creation impact was the harmonized Swiss formula in contrast to a 10 and 15 percent uniform tariff. Second, a possible Regional Economic Partnership Agreement (REPA) between the European Union and *l'Union Économique et Monétaire Ouest-Africaine* (UEMOA) by 2015 that would abolish duties on EU imports to the UEMOA countries would have negative fiscal effects on Niger of more than 1 percent of GDP, positive effects on trade creation of about 1.5 percent of GDP, and ambiguous effects on local industry. While there will be some welfare gains for consumers and importers from lower import tariffs and the possibility of trade creation, the fiscal losses and adjustment costs would be significant, particularly in the machinery and transport sectors. Third, there are asymmetric gains and losses from regional integration and tariff changes, and a 10 percent uniform tariff would have the greatest impact on Benin and Senegal and some impact on Niger and Togo. In sum, further trade liberalization in Niger will have significant fiscal costs, partially offset by trade creation through increased imports.

This paper—a product of Poverty Reduction and Economic Management 3, Africa Technical Families—is part of a larger effort in the region to understand the reasons for low resource mobilization. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Josiane Luchmun, room J7-276, telephone 202-473-7530, fax 202-473-8466, email address jluchmun@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at azafar@worldbank.org. (27 pages)

3501. Telecommunications Reform within Russia's Accession to the World Trade Organization

Jesper Jensen, Thomas Rutherford, and David Tarr
(February 2005)

In World Trade Organization (WTO) accession negotiations, telecommunications is always a sector that receives close scrutiny by the WTO Working Party, and the extent of market access and nondiscriminatory treatment of multinational telecommunications companies in Russia has been a significant issue in Russia's accession negotiations. Jensen, Rutherford, and Tarr use a computable general equilibrium model of the Russian economy to assess the role of telecommunications in the discussions regarding Russian accession to the WTO. The results show that reduction of barriers to foreign direct investment in telecommunications will bring substantial gains to the Russian economy, including an increase in the productivity of Russian labor and capital. Despite the fact that multinationals use Russian labor less intensively than Russian firms, demand for Russian labor employed in telecommunications should increase, following reductions in barriers to foreign direct investment that are included in the context of WTO accession. This is because the overall demand for telecommunication services should increase due to the growth effects of the liberalization of barriers against foreign direct investment generally and the reduction in tariffs. Russian capital owners in telecommunications will likely be sought as joint venture partners and can restructure and obtain gains as partners with foreign firms. Wholly owned Russian firms are likely to experience losses.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to assess the consequences of liberalization of barriers against foreign direct investment in services. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. David Tarr may be contacted at dtarr@worldbank.org. (37 pages)

3502. Access to Capital in Rural Thailand: An Estimated Model of Formal versus Informal Credit

Xavier Gine
(February 2005)

The aim of this paper is to understand the mechanism underlying access to credit. Gine focuses on two important aspects of rural credit markets in Thailand. First, moneylenders and other informal lenders coexist with formal lending institutions such as government or commercial banks, and more recently, micro-lending institutions. Second, potential borrowers presumably face sizable transaction costs obtaining external credit. The author develops and estimates a model based on limited enforcement and transaction costs that provides a unified view of those facts. The results show that the limited ability of banks to enforce contracts, more than transaction costs, is crucial in understanding the observed diversity of lenders.

This paper—a product of the Finance Team, Development Research Group—is part of a larger effort in the group to understand access to credit. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mani Jandu, mail stop MC3-456, telephone 202-473-3103, fax 202-522-1155, email address mjandu@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at xgine@worldbank.org. (41 pages)

3503. Lasting Local Impacts of an Economywide Crisis

Martin Ravallion and Michael Lokshin
(February 2005)

The immediate welfare costs of an economywide crisis can be high, but are there also lasting impacts? And are they greater in some geographic areas than others? Ravallion and Lokshin study Indonesia's severe financial crisis of 1998. They use 10 national surveys spanning 1993–2002, each covering 200,000 randomly sampled households, to estimate the impacts on mean consumption and the incidence of poverty across each of 260 districts. Counterfactual analyses indicate geographically diverse impacts years after the crisis. Proportionate impacts on the poverty rate were greater in initially better off and less unequal areas. In the aggregate, a large share—possibly the majority—of those Indonesians who were still poor in 2002 would not have been so without the 1998 crisis.

This paper—a product of the Poverty Team, Development Research Group—is part of a larger effort in the group to assess the social impacts of economywide crises. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-556, telephone 202-473-3902, fax 202-522-1151, email address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at mravallion@worldbank.org or mlokshin@worldbank.org. (35 pages)

3504. Unemployment and the Earnings Structure in Latvia

Mihails Hazans
(February 2005)

Latvia has recorded sustained GDP and productivity growth since 1997. Yet unemployment rates, despite gradual decrease, have remained high. Hazans explores the mysteries of unemployment in Latvia. He analyzes labor flows between employment, unemployment, and nonparticipation and finds the following results:

- The type of education and the region of residence appear to be the most important determinants of success in finding jobs by the unemployed.
- The unemployed from ethnic minorities have lower chances to find a job within a year, other things equal, while the difference between genders is not significant. However, neither ethnicity nor gender seems to matter as far as the transition from employment to unemployment is concerned.
- Regional disparities in job destruction seem to be less sizable than disparities in job creation.
- The analysis of job search methods by the unemployed indicates that two target groups of state employment policy (young unemployed and long-term unemployed) appear to make relatively little use of the public employment service.

The author also looks at the impact of education, age, gender, ethnicity, and regional factors on individual earnings. The relative position of youth and women in Latvian labor market, compared with prime-age men, is less unfavorable than in many other countries. Yet the gender wage gap has increased recently, and the same is true for regional disparities. Beneficiaries of the so-called "new" education system have a relatively high market value, especially with graduates from universities and general secondary schools. Finally, returns to experience seem to be nonexistent for many adult workers without higher education.

This paper—a product of the Poverty Reduction and Economic Management Division, Europe and Central Asia Region—is part of a larger effort in the region to understand labor market dynamics. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mismake Galatis, room H4-312, telephone 202-473-1177, fax 202-522-2751, email address mgalatis@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at mihazan@lanet.lv. (86 pages) may be contacted at ralsop@worldbank.org. (122 pages)

3511. Bank Privatization and Performance: Empirical Evidence from Nigeria

Thorsten Beck, Robert Cull, and Afeikhena Jerome
(February 2005)

Beck, Cull, and Jerome assess the effect of privatization on performance in a panel of Nigerian banks for the period 1990–2001. They find evidence of performance improvement in nine banks that were privatized, which is remarkable given the inhospitable environment for true financial intermediation. Their results also suggest negative effects of the continuing minority government ownership on the performance of many Nigerian banks. The authors' results complement aggregate indications of decreasing financial intermediation over the 1990s. Banks that focused on investment in government bonds and non-lending activities enjoyed a relatively higher performance.

This paper—a product of the Finance Team, Development Research Group—is part of a larger effort in the group to study the effects of bank privatization in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, mail stop MC3-300, telephone 202-473-1823, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at tbeck@worldbank.org or rcull@worldbank.org. (37 pages)

3512. Policy Mix, Public Debt Management, and Fiscal Rules: Lessons from the 2002 Brazilian Crisis

Santiago Herrera
(February 2005)

Despite significant progress in economic reform throughout the 1990s and an exemplary development of the policymaking framework in the second part of the decade, Brazil suffered a major public debt and currency crisis in 2002. Though the political origin of the uncertainty cannot be ignored, Herrera identifies other sources of uncertainty emanating from the policymaking framework: fiscal policy was not responsive to the shocks, public debt instruments were used with several objectives (to stabilize the currency and to lengthen maturity) and there was inadequate supervision of agents holding public debt. Most of the flaws have been fixed following the crisis:

- The primary fiscal balance has been increased, sending the signal that it is a flexible instrument that will be used to ensure commitment of the sovereign to honor its obligations.
- The central bank formally transferred to the Treasury the remaining debt-issuance functions, facilitating a more adequate balancing of different risks involved in debt management.
- Mutual funds' public debt holdings are better regulated, ensuring that end-investors have the proper information to assess the risk of the institutions in which they invest.

This paper—a product of the Economic Policy Division, Poverty Reduction and Economic Management Network—is part of a larger effort in the network to disseminate country experiences in the design of policymaking frameworks that facilitate adjustment of the economy to external shocks. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sarah Lipscomb, room MC4-424, telephone 202-473-3718, email address slipscomb@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at sherrera@worldbank.org. (31 pages)

3513. How Concentrated are Global Infrastructure Markets?

Daniel Benitez and Antonio Estache
(February 2005)

In infrastructure, the possibility of a positive relationship between operators' profitability and the degree of concentration is a major political issue in view of the wide diversity of feelings about the potential role of the private sector. This is particularly important because of (1) the large residual degree of monopolies, (2) the protection they are granted through exclusivity clauses built in service delivery contracts, and (3) the widespread sense that the same operators tend to be present in most of the privatized operations. The main purpose of this paper is to provide a first set of quantitative assessments of the degree of concentration in infrastructure at the global and the regional levels. Concentration issues were identified in only about 20 percent of the cases studied, and a presumption of concentration was found in another 30 percent of the cases. Benitez and Estache find no correlation between the degree of concentration and the degree of reform adopted by a region or a sector. In more general terms, they find no scope for simple encompassing regional or sectoral statements because issues are region- and sector-specific. The authors conclude by arguing that there are a few cases and regions in which it would make sense for a supranational competition or regulation agency to ensure that the interests of the users are protected more effectively against the risks of collusion and other types of anti-competitive behaviors local regulators would not be equipped to address.

This paper—a product of the Office of the Vice President, Infrastructure Network—is part of a larger effort in the network to document the state of the sector. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Antonio Estache, room H3-145, telephone 202-458-1442, fax 202-522-2961, email address aestache@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Daniel Benitez may be contacted at daniel.benitez@univ-tlse1.fr. (25 pages)

3514. Infrastructure Performance and Reform in Developing and Transition Economies: Evidence from a Survey of Productivity Measures

Antonio Estache, Sergio Perelman, and Lourdes Trujillo
(February 2005)

Estache, Perelman, and Trujillo review about 80 studies on electricity and gas, water and sanitation, and rail and ports (with a footnote on telecommunications) in developing countries. The main policy lesson is that there is a difference in the relevance of ownership for efficiency between utilities and transport in developing countries. In transport, private operators have tended to perform better than public operators. For utilities, ownership often does not matter as much as sometimes argued. Most cross-country studies find no statistically significant difference in efficiency scores between public and private providers. As for the country-specific studies, some do find differences in performance over time but these differences tend to matter much less than a large number of other variables. Across sectors, private operators functioning in a competitive environment or regulated under price caps or hybrid regulatory regimes tend to catch up best practice faster than public operators. There is a very strong case to push regulators in developing and transition economies toward a more systematic reliance on yardstick competition in a sector in which residual monopoly powers tend to be common.

This paper—a product of the Office of the Vice President, Infrastructure Network—is part of a larger effort in the network to document the state of the sector. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Antonio Estache, room H3-145, telephone 202-458-1442, fax 202-522-2961, email address aestache@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. (27 pages)

3515. Reforms and Infrastructure Efficiency in Spain's Container Ports

María Manuela González Serrano and Lourdes Trujillo
(February 2005)

Serrano and Trujillo quantify the evolution of technical efficiency in port infrastructure service provision in the major Spanish port authorities involved in container traffic. They also analyze the extent to which port reforms that took place in the 1990s had an impact on the efficiency of the Spanish container ports. Because of the multi-output nature of port activities, the authors have estimated a distance function, which is a novel methodology in the study of the port industry. Their results show that the reforms resulted in significant improvements in technological change, but that technical efficiency has in fact changed little on average. But there is a significant movement of the efficiency within ports over time as a result of these reforms.

This paper—a product of the Office of the Vice President, Infrastructure Network—is part of a larger effort in the network to document the impact of regulatory reform. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Antonio Estache, room H3-145, telephone 202-458-1442, fax 202-522-2961, email address aestache@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. María Manuela González Serrano may be contacted at mmgonzalez@daea.ulpgc.es. (21 pages)

3516. Sustainability of Microfinance Self Help Groups in India: Would Federating Help?

Ajai Nair
(February 2005)

The major form of microfinance in India is that based on women's Self Help Groups (SHGs), which are small groups of 10–20 members. These groups collect savings from their members and provide loans to them. However, unlike most accumulating savings and credit associations (ASCAs) found in several countries, these groups also obtain loans from banks and on-lend them to their members. By 2003, over 700,000 groups had obtained over Rs.20 billion (US$425 million) in loans from banks benefiting more than 10 million people. Delinquencies on these loans are reported to be less than 5 percent. Savings in these groups is estimated to be at least Rs.8 billion (US$170 million). Despite these considerable achievements, sustainability of the SHGs has been suspect because several essential services required by the SHGs are provided free or at a significantly subsidized cost by organizations that have developed these groups. A few promoter organizations have, however, developed federations of SHGs that provide these services and others that SHG members need, but which SHGs cannot feasibly provide. Using a case study approach, Nair explores the merits and constraints of federating. Three SHG federations that provide a wide range of services are studied. The findings suggest that federations could help SHGs become institutionally and financially sustainable because they provide the economies of scale that reduce transaction costs and make the provision of these services viable. But their sustainability is constrained by several factors—both internal, related to the federations themselves, and external, related to the other stakeholders. The author concludes by recommending some actions to address these constraints.

This paper—a product of the Finance and Private Sector Development Unit, South Asia Region—is part of a larger effort in the region to study access to finance in India. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marjorie Espiritu, room MC10-122, telephone 202-458-7755, fax 202-522-1145, email address mespiritu@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at anair@worldbank.org. (45 pages)

3517. Trade Liberalization and the Politics of Financial Development

Matías Braun and Claudio Raddatz
(February 2005)

A well developed financial system enhances competition in the industrial sector by allowing easier entry. The impact varies across industries, however. For some, small changes in financial development quickly induce entry and dissipate incumbents' rents, generating strong incentives to oppose improvement of the financial system. In other sectors incumbents may even benefit from increased availability of external funds. The relative strength of promoters and opponents determines the political equilibrium level of financial system development. This may be perturbed by the effect of trade liberalization in the strength of each group. Using a sample of 41 trade liberalizers Braun and Raddatz conduct an event study and show that the change in the strength of promoters vis-à-vis opponents is a very good predictor of subsequent financial development. The result is not driven by changes in demand for external funds, or by the success of the trade policy. The relationship is mediated by policy reforms, the kind that induces competition in the financial sector, in particular. Real effects follow not so much from capital deepening but mainly through improved allocation. The effect is stronger in countries with high levels of governance, suggesting that incumbents resort to this costly but more subtle way of restricting entry where it is difficult to obtain more blatant forms of anti-competitive measures from politicians.

This paper—a product of the Investment and Growth Team, Development Research Group—is part of a larger effort in the group to understand the relation between finance and the macroeconomy. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-7644, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Claudio Raddatz may be contacted at craddatz@worldbank.org. (46 pages)

3518. The Role of Importers and Exporters in the Determination of the U.S. Tariff Preferences Granted to Latin America

Peri Silva
(February 2005)

Silva investigates the role played by domestic importers and foreign exporters in improving preferential access to the domestic market. To this end, the framework he uses extends the protection for sale analysis to explicitly model the role of domestic importers and foreign exporters in determining preferential trade treatment. The author tests the predictions of the model using data on preferential trade between the United States and Latin American countries. The results suggest that Latin American exporters and U.S. importers' lobbying efforts have a significant and important role in determining the extent of preferential access granted by the United States. More interestingly, these findings also show that U.S. importers capture a substantial share of the rents generated by tariff preferences. These results therefore shed a pessimistic view on preferential trade schemes as a reliable source of gains for developing countries.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the political economy determinants of preferential trade. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at pasilva@uiuc.edu. (48 pages)

3519. How Do Differing Standards Increase Trade Costs? The Case of Pallets

Gaël Raballand and Enrique Aldaz-Carroll
(February 2005)

The pallet is a platform used for storing, handling, and transporting products. There are hundreds of different pallet sizes around the world. Raballand and Aldaz-Carroll examine the case of pallets to illustrate the impact of multiplicity of standards on trade costs. They select this case because pallets are used all around the world, pallet standards are not too sophisticated, and data on the impact of pallet standards are to some extent available. The authors examine why there are so many different pallet sizes, the associated trade costs, and the reasons why countries have not harmonized pallet sizes to eliminate such costs. They then present options for exporters to mitigate the adverse effects of standards multiplicity while complying with destination markets' standard requirements. The range of options is limited in the case of exporters from less developed countries because of the lack of rental and exchange pallet markets. To mitigate the costs of this multiplicity of standards, the World Bank's strategy should be divided in two directions: to develop awareness of costs related to the multiplicity of standards and to support actively harmonization at the global level (within International Organization for Standardization) and at the regional level (within regional cooperation agreements).

This paper—a product of the International Trade Department, Poverty Reduction and Economic Management Network—is part of a larger effort in the network to analyze the impact of standards on trade. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC2-410, telephone 202-473-6896, fax 202-522-7551, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at graballand@worldbank.org or ealdazcarroll@worldbank.org. (20 pages)

3520. Environment as Cultural Heritage: The Armenian Diaspora's Willingness-to-Pay to Protect Armenia's Lake Sevan

Benoît Laplante, Craig Meisner, and Hua Wang
(February 2005)

Laplante, Meisner, and Wang present a study of willingness-to-pay of the Armenian Diaspora in the United States to protect Armenia's Lake Sevan, a unique and precious symbol of the Armenian cultural heritage. Dichotomous choice contingent valuation questions were asked in mail surveys to elicit respondents' willingness to pay for the protection of Lake Sevan. The results show that on average, each household of the Armenian Diaspora in the United States would be willing to provide a onetime donation of approximately US$80 to prevent a further degradation of Lake Sevan, and approximately US$280 to restore the quality of the lake by increasing its water level by three meters.

This paper—a product of the Infrastructure and Environment Team, Development Research Group—is part of a larger effort in the group to understand environmental economics. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Yasmin D'Souza, room MC2-622, telephone 202-473-1449, fax 202-522-3230, email address ydsouza@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Hua Wang may be contacted at hwang1@worldbank.org. (35 pages)

3521. Religious School Enrollment in Pakistan: A Look at the Data

Tahir Andrabi, Jishnu Das, Asim Ijaz Khwaja, and Tristan Zajonc
(February 2005)

Bold assertions have been made in policy reports and popular articles on the *high* and *increasing* enrollment in Pakistani religious schools, commonly known as madrassas. Given the importance placed on the subject by policymakers in Pakistan and those internationally, it is troubling that none of the reports and articles reviewed based their analysis on publicly available data or established statistical methodologies. The authors of this paper use published data sources and a census of schooling choice to show that existing estimates are inflated by an order of magnitude. Madrassas account for less than 1 percent of all enrollment in the country and there is no evidence of a dramatic increase in recent years. The educational landscape in Pakistan *has* changed substantially in the past decade, but this is due to an explosion of private schools, an important fact that has been left out of the debate on Pakistani education. Moreover, when the authors look at school choice, they find that no one explanation fits the data. While most existing theories of madrassa enrollment are based on household attributes (for instance, a preference for religious schooling or the household's access to other schooling options), the data show that among households with at least one child enrolled in a madrassa, 75 percent send their second (and/or third) child to a public or private school or both. Widely promoted theories simply do not explain this substantial variation within households.

This paper—a product of the Public Services Team, Development Research Group—is part of a larger effort in the group to examine issues relating to educational outcomes. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, mail stop MC3-311, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at tandrabi@pomona.edu or jdas1@worldbank.org. (41 pages)

3522. China's Employment Challenges and Strategies after the WTO Accession

Douglas Zhihua Zeng
(February 2005)

Although China has made impressive progress in economic development and improving social well-being, it is facing many daunting challenges while transforming toward a knowledge and service-based economy and further opening up to international competition after its WTO accession in the context of knowledge revolution. One of the biggest challenges is how to create 100–300 million new jobs in the coming decade to absorb the millions of laid-offs, rural emigrants, and newly added labor force. China has been successful in building high-technology parks and information and communications technology (ICT) industries, but they are limited in terms of employment generation, while most of the traditional labor-intensive industries are losing competitiveness due to low productivity. To combat the unprecedented employment challenge, China must implement a systemic and sustained strategy, which may consist of the following policy thrusts: encouraging the private sector; promoting small and medium enterprises; expanding the service sector; reforming the state-owned enterprises; strengthening the social security system; improving labor market flexibility; and establishing mass retraining programs.

This paper—a product of the Knowledge for Development Division, World Bank Institute—is part of a larger effort in the institute to provide country-focused knowledge services for client countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Faythe Calandra, room J2-267, telephone 202-473-6440, fax 202-522-1492, email address fcalandra@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at zzeng@worldbank.org. (34 pages)

3523. School Meals, Educational Achievement, and School Competition: Evidence from a Randomized Evaluation

Christel Vermeersch and Michael Kremer
(February 2005)

Vermeersch and Kremer examine the effects of subsidized school meals on school participation, educational achievement, and school finance in a developing country setting. They use data from a program that was implemented in 25 randomly chosen preschools in a pool of 50. Children's school participation was 30 percent higher in the treatment group than in the comparison group. The meals program led to higher curriculum test scores, but only in schools where the teacher was relatively experienced prior to the program. The school meals displaced teaching time and led to larger class sizes. Despite improved incentives, teacher absenteeism remained at a high level of 30 percent. Treatment schools raised their fees, and comparison schools close to treatment schools decreased their fees. Some of the price effects are caused by a combination of capacity constraints and pupil transfers that would not happen if the school meals were ordered in all schools. The intention-to-treat estimator of the effect of the randomized program incorporates those price effects, and therefore it should be considered a lower bound on the effect of generalized school meals. This insight on price effects generalizes to other randomized program evaluations.

This paper—a product of the Poverty Reduction and Economic Management 2, Africa Technical Families—is part of a larger effort in the region to increase our understanding of the impact of programs aimed at reaching the Millennium Development Goals. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marjorie Kingston, room J10-280, telephone 202-473-4558, fax 202-473-8262, email address mkingston@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at vermeersch@post.harvard.edu or mkremer@fas.harvard.edu. (51 pages)

3524. Sowing and Reaping: Institutional Quality and Project Outcomes in Developing Countries

David Dollar and Victoria Levin
(February 2005)

Much of the academic debate on the effectiveness of foreign aid is centered on the relationship between aid and growth. Different aid-growth studies find conflicting results: aid promotes growth everywhere; aid has a zero or negative impact on growth everywhere; or the effect of aid on growth depends on recipient-specific characteristics, such as the quality of institutions and policies. Although these studies fuel an interesting debate, cross-sectional macroeconomic studies cannot be the last word on the topic of aid effectiveness. In this paper, Dollar and Levin introduce microeconomic evidence on factors conducive to the success of aid-funded projects in developing countries. The authors use the success rate of World Bank-financed projects in the 1990s, as determined by the Operations Evaluation Department, as their dependent variable. Using instrumental variables estimation, the authors find that existence of high-quality institutions in a recipient country raises the probability that aid will be used effectively. There is also some evidence that geography matters, but location in Sub-Saharan Africa is a more robust indicator of lower project success rate than tropical climate. The authors proceed to disaggregate the success rate of World Bank projects by lending instrument type and by investment sector, finding that different institutions are more important for different types of projects. The finding of a strong relationship between institutional quality and project success serves to provide further support to the hypothesis that aid effectiveness is conditional on institutions and policies of the recipient country.

This paper—a product of Development Policy, Development Economics Senior Vice Presidency—is part of a larger effort in the Bank to examine aid effectiveness. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Victoria Levin, room H4-412, telephone 202-473-6368, fax 202-614-7776, email address vlevin@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. David Dollar may be contacted at ddollar@worldbank.org. (24 pages)

3525. Institutional and Policy Analysis of River Basin Management: The Fraser River Basin, Canada

William Blomquist, Ken S. Calbick, and Ariel Dinar
(February 2005)

The authors describe and analyze a nongovernmental, multi-stakeholder, consensus-based approach to river basin management in the Fraser River basin in Canada. The Fraser River drains 238,000 km^2 of British Columbia, supporting nearly 3 million residents and a diverse economy. Water management issues include water quality and allocation, flood protection, and emerging scarcity concerns in portions of the basin. The Fraser Basin Council (FBC) is a locally-initiated nongovernmental organization (NGO) with representation from public and private stakeholders. Since evolving in the 1990s from earlier programs and projects in the basin, FBC has pursued several objectives related to a broad concept of basin "sustainability" incorporating social, economic, and environmental aspects. The NGO approach has allowed FBC to match the boundaries of the entire basin, avoid some intergovernmental turf battles, and involve First Nations communities and private stakeholders in ways governmental approaches sometimes find difficult. While its NGO status means that FBC cannot implement many of the plans it agrees on and must constantly work to maintain diverse yet stable funding, FBC holds substantial esteem among basin stakeholders for its reputation for objectivity, its utility as an information sharing forum, and its success in fostering an awareness of interdependency within the basin.

This paper—a product of the Agricultural and Rural Development Department—is part of a larger effort in the department to approach water policy issues in an integrated way. The study was funded by the Bank's Research Support Budget under the research project "Integrated River Basin Management and the Principle of Managing Water Resources at the Lowest Appropriate Level: When and Why Does It (Not) Work in Practice?" Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melissa Williams, room MC5-724, telephone 202-458-7297, fax 202-614-0034, email address mwilliams4@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Ariel Dinar may be contacted at adinar@worldbank.org. (34 pages)

3526. Institutional and Policy Analysis of River Basin Management: The Guadalquivir River Basin, Spain

William Blomquist, Consuelo Giansante, Anjali Bhat, and Karin Kemper
(February 2005)

The authors describe and analyze river basin management in the Guadalquivir River Basin in Spain. The Guadalquivir river flows westerly across southern Spain, with nearly all of its 57,017 km^2 drainage area within the region of Andalusia. Water management issues in this semiarid, heavily agricultural, but rapidly urbanizing region include drought exposure, water allocation, water quality, and in some areas, groundwater overdraft. A river basin agency (*Confederacion Hidrografica del Guadalquivir*, or CH Guadalquivir) has existed within the basin since 1927, but its responsibilities have changed substantially over its history. For much of its life, CH Guadalquivir's mission was water supply augmentation through construction and operation of reservoirs, primarily to support irrigation, under central government direction with little provision for water user participation. Following the Spanish political system's transformation and Spain's accession to the European Union, water law and policy changes greatly expanded CH Guadalquivir's responsibilities and restructured it to incorporate representation of some basin stakeholders. Although the basin agency's accomplishments in reservoir construction have been prodigious, its record of performance with respect to its newer responsibilities has been mixed, as have perceptions of its openness and responsiveness to basin interests other than irrigators.

This paper—a product of the Agriculture and Rural Development Department—is part of a larger effort in the department to approach water policy issues in an integrated way. The study was funded by the Bank's Research Support Budget under the research project "Integrated River Basin Management and the Principle of Managing Water Resources at the Lowest Appropriate Level: When and Why Does It (Not) Work in Practice?" Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melissa Williams, room MC5-724, telephone 202-458-7297, fax 202-614-0034, email address mwilliams4@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Karin Kemper may be contacted at kkemper@worldbank.org. (40 pages)

3527. Institutional and Policy Analysis of River Basin Management: The Murray Darling River Basin, Australia

William Blomquist, Brian Haisman, Ariel Dinar, and Anjali Bhat
(February 2005)

The authors describe and analyze management in the Murray-Darling basin of Australia, long regarded as a model for integrated river basin management. This interior basin of over 1 million km^2 in semiarid southeastern Australia is defined by the catchment areas of the Murray and Darling Rivers and their tributaries. Water management issues include allocation, quality, and dryland salinity. Because of Australia's federal governmental structure, institutional development has been more a matter of integrating state and local endeavors than decentralization of national authority. The Australian national government has little constitutional power over water resources. The five states in the basin make policy regarding water rights, discharge permits, fees, and the construction and operation of physical structures. River management began on the Murray River in the 1920s under the terms of a tri-state agreement. As the scope of management widened to the entire basin, more states were added and the national government supported the creation of new arrangements for integrated water resource management, with some provision for stakeholder participation. The dynamics of state-national authority over water policy, and the emergence in recent years of numerous local-level catchment organization, contribute to some uncertainty about the future course of basin management in this internationally renowned site.

This paper—a product of the Agriculture and Rural Development Department—is part of a larger effort in the department to approach water policy issues in an integrated way. The study was funded by the Bank's Research Support Budget under the research project "Integrated River Basin Management and the Principle of Managing Water Resources at the Lowest Appropriate Level: When and Why Does It (Not) Work in Practice?" Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melissa Williams, room MC5-724, telephone 202-458-7297, fax 202-614-0034, email address mwilliams4@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Ariel Dinar may be contacted at adinar@worldbank.org. (37 pages)

3528. Institutional and Policy Analysis of River Basin Management: The Warta River Basin, Poland

William Blomquist, Andrzej Tonderski, and Ariel Dinar
(February 2005)

The authors describe and analyze the emergence of river basin management in the Warta River Basin of Poland. The Warta basin's 55,193 km^2 cover approximately one-sixth of Poland, and the Warta is a principal tributary to the Oder. Water management issues include pollution of the Warta and its main tributaries, prompting cities to rely on groundwater supplies that are beginning to show signs of overdraft, and growing problems of water allocation and scarcity as the basin urbanizes and industrializes. Since the end of the 1980s, the Polish government has been promoting decentralization, constructing a federal system that includes provinces, counties, and municipalities with authority over land use, water use permits, and environmental protection. Polish authorities have also established river basin management authorities corresponding to basin boundaries throughout the nation, including one for the Warta basin. The efforts toward decentralization and integrated water resource management in Poland have been earnest, but the dispersion of water policy authority across several levels of government, the establishment of basin authorities lacking power and funding to implement resource management programs, few arrangements for stakeholder participation, and delays in Polish water law reform have complicated the development and implementation of integrated management at the basin level.

This paper—a product of the Agriculture and Rural Development Department—is part of a larger effort in the department to approach water policy issues in an integrated way. The study was funded by the Bank's Research Support Budget under the research project "Integrated River Basin Management and the Principle of Managing Water Resources at the Lowest Appropriate Level: When and Why Does It (Not) Work in Practice?" Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melissa Williams, room MC5-724, telephone 202-458-7297, fax 202-614-0036, email address mwilliams4@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Ariel Dinar may be contacted at adinar@worldbank.org. (37 pages)

3529. Economic Evaluation of Housing Subsidy Systems: A Methodology with Application to Morocco

David le Blanc
(February 2005)

Most countries do not use one single type of housing subsidy but combine many of them. Le Blanc provides operational criteria that allow evaluation of systems of housing subsidies, both at the individual program level and at the aggregate (country) level. He examines the public finance assessment criteria used by different authors to analyze subsidy programs and confront them systematically. Le Blanc ends up with a "map" of criteria, which covers the range of topics interesting to policymakers. For each criterion, he tries to provide empirical measures that can be retrieved from existing programs. He then provides an aggregation method allowing a synthesis of diagnoses about the "quality" of the housing subsidies system at the country level. The aggregation technique offers a simple way to visualize the main features of a subsidy system, as well as the effects on the system of reforms or improvements of particular programs.

The author applies the methodology to the system prevailing in Morocco in 1995 and 2004. The analysis shows that the most visible subsidies might not have been the most inefficient, nor the most resource consuming for the state. Examination of policy changes since 1995 shows that while the most visible subsidies received nearly all the government's attention, large invisible subsidies remain at the heart of Morocco's housing policy. The framework used here is very general and can be used to compare the Moroccan system with those of similar countries.

This paper—a product of the Urban Unit, Transport and Urban Development Department—is part of a larger effort in the department to provide evaluation frameworks to better understand housing markets in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact David le Blanc, room H9-231, telephone 202-458-0990, fax 202-477-1993, email address dleblanc@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. (56 pages)

3530. Legal Effectiveness and External Capital: The Role of Foreign Debt

George Allayannis, Gregory W. Brown, and Leora F. Klapper
(March 2005)

Previous research has documented weak, and sometimes conflicting, effects of legal quality on measures of firm debt. Using WorldScope data for 1,689 firms, as well as more detailed proprietary data for 315 firms across nine East Asian countries, Allayannis, Brown, and Klapper find that access to foreign financing appears to loosen borrowing constraints associated with poor legal systems. This helps resolve inconsistencies in prior findings and explains how legal protection is important for borrowing by firms. In particular, they find that legal effectiveness is important for determining the amount, maturity, and currency denomination of debt. The authors discuss several mechanisms by which firms can avoid the costs of poor legal systems with foreign borrowing. The paper contributes to the policy debate surrounding the importance of creditor rights for domestic lending.

This paper—a product of the Finance Team, Development Research Group—is part of a larger effort in the group to study access to financing. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mani Jandu, room MC3-456, telephone 202-473-3103, fax 202-522-1155, email address mjandu@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at allayannisy@darden.virginia.edu, gregwbrown@unc.edu, or lklapper@worldbank.org . (29 pages)

3531. Geopolitical Interests and Preferential Access to U.S. Markets

Daniel Lederman and Çaglar Özden
(March 2005)

The United States imports around 25 percent of its merchandise under some form of preferential trade regime. Lederman and Özden examine both the origins and consequences of U.S. trade preferences in the context of the gravity model of international trade. First, they provide estimates of the impact of preferential trade regimes in terms of access to U.S. markets while controlling for geostrategic interests that determine the countries that are offered commercial preferences. Second, the authors consider not only country eligibility but also the extent of utilization of these programs. Third, they provide new estimates of the impact of transport and transactions costs beyond distance. In the standard gravity estimation, the authors find that beneficiaries of these preferences, except GSP, export 2–3 times more than the excluded countries, after controlling for country and product characteristics. Nonetheless, the estimated effects of these programs are lower when controlling for utilization ratios and selection biases due to the correlation between geopolitical interests and the standard explanatory variables used in the gravity model of trade, such as countries' geographic distance from the United States.

This paper—a product of the Office of the Chief Economist, Latin America and the Caribbean Region—is part of a larger effort in the region to study the effects of trade agreements. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Soto, room I8-018, telephone 202-473-7892, fax 202-522-7528, email address psoto@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at dlederman@worldbank.org or cozden@worldbank.org. (28 pages)

3532. Remittances, Household Expenditure, and Investment in Guatemala

Richard H. Adams, Jr.
(March 2005)

Adams uses a large household data set from Guatemala to analyze how the receipt of internal remittances (from Guatemala) and international remittances (from the United States) affects the marginal spending behavior of households on various consumption and investment goods. Contrary to other studies, the author finds that households receiving remittances actually spend less at the margin on consumption—food and consumer goods and durables—than do households receiving no remittances. Instead of spending on consumption, households receiving remittances tend to spend more on investment goods, like education, health, and housing. The analysis shows that a large amount of remittance money goes into education. At the margin, households receiving internal and international remittances spend 45 and 58 percent more, respectively, on education, than do households with no remittances. These increased expenditures on education represent investment in human capital. Like other studies, the author finds that remittance-receiving households spend more at the margin on housing. These increased expenditures on housing represent a type of investment for the migrant, as well as a means for boosting local economic development by creating new income and employment opportunities for skilled and unskilled workers.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the impact of international migration and remittances on poverty and development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at radams@worldbank.org. (34 pages)

3533. Disciplining Agricultural Support through Decoupling

John Baffes and Harry de Gorter
(March 2005)

Agricultural protection, particularly in high income countries, have induced overproduction, thereby depressing world commodity prices and reducing export shares of countries which do not support agriculture. One—and perhaps the only—effective way to bring a socially acceptable and politically feasible reform is to replace payments linked to current production levels, input use, and prices by payments which are decoupled from these measures. Overall, the experience with decoupling agricultural support has been mixed while the switch to less distortive support has been uneven across commodities and countries. Rules have changed with new decoupling programs added so expectations about future policies affect current production decisions. Time limits were not implemented and if so, were overruled. Ideally, compensation programs would be universal (open to all sectors in the economy, not just agriculture) or at least nonsector-specific within agriculture. A simple and minimally distorting scheme would be a onetime unconditional payment to everyone engaged in farming or deemed in need of compensation that is nontransferable, along the lines of one-time buyouts without remaining subsidies. To maintain government credibility and reduce uncertainty, eligibility rules need to be clearly defined and not allowed to change. The time period on which payments are based, the level of payments, and the sectors covered should all remain fixed. Support to specific sectors within agriculture should be in the form of taxpayer-funded payments. There should be no requirement of production. Land, labor, and any other input should not have to be in "agricultural use."

This paper—a product of the Development Prospects Group—is part of a larger effort in the group to examine the impact of agricultural trade reforms on global commodity markets. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact John Baffes, room MC2-200, telephone 202-458-1880, fax 202-522-3564, email address jbaffes@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. (70 pages)

3534. The Co-Movement between Cotton and Polyester Prices

John Baffes and Gaston Gohou
(March 2005)

Baffes and Gohou examine the price linkages among polyester (the dominant chemical fiber), cotton (the dominant natural fiber), and crude oil (the dominant energy commodity) based on monthly data between 1980 and 2002. The modeling framework incorporates several aspects of the unit root econometrics literature. They find that:

- There is strong co-movement between cotton and polyester prices, well above the co-movement observed between these two prices and prices of other primary commodities.
- Crude oil prices have a stronger effect on polyester prices compared with cotton prices.
- Price shocks originating in the polyester market are transmitted at much higher speed to the cotton market than vice-versa.

This paper—a product of the Development Prospects Group—is part of a larger effort in the group to gain a better understanding of the nature of primary commodity markets. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact John Baffes, room MC2-200, telephone 202-458-1880, fax 202-522-3564, email address jbaffes@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. (29 pages)

3535. Regulatory Effectiveness and the Empirical Impact of Variations in Regulatory Governance: Electricity Industry Capacity and Efficiency in Developing Countries

John Cubbin and Jon Stern
(March 2005)

Cubbin and Stern assess for 28 developing countries over the period 1980–2001 whether the existence of a regulatory law and higher quality regulatory governance are significantly associated with superior electricity outcomes. Their analysis draws on theoretical and empirical work on the impact of independent central banks and of developing country telecommunications regulators. The authors' empirical analysis concludes that a regulatory law and higher quality governance are positively and significantly associated with higher per capita generation capacity levels. In addition, this positive impact continues to increase for at least three years and probably for over 10 years as experience develops and regulatory reputation grows. The results are robust to alternative dynamic specifications and show no sign of any significant endogeneity biases.

This paper—a product of the Investment and Growth Team, Development Research Group—is part of a larger effort in the group to analyze the structure, conduct, and performance of the infrastructure sectors in transition and developing economies, and to identify public policies designed to improve their performance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-8526, fax 202-522-1155, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at jstern@london.edu or j.s.cubbin@city.ac.uk. (45 pages)

3536. Regulatory Effectiveness: The Impact of Regulation and Regulatory Governance Arrangements on Electricity Industry Outcomes

Jon Stern and John Cubbin
(March 2005)

Stern and Cubbin review a number of studies on the effectiveness of utility regulatory agency and governance arrangements for the electricity industry, particularly for developing countries. They discuss governance criteria and their measurement, both legal frameworks and surveys of regulatory practice. They also discuss the results from econometric studies of effectiveness for regulatory agencies in the electricity and telecommunications industries and compare these with the results from econometric studies of independent central banks and their governance. The authors conclude with a discussion of policy implications and of priorities for information collection to improve understanding of these issues.

This paper—a product of the Investment and Growth Team, Development

Research Group—is part of a larger effort in the group to analyze the structure, conduct, and performance of the infrastructure sectors in transition and developing economies, and to identify public policies designed to improve their performance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-8526, fax 202-522-1155, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at jstern@london.edu or j.s.cubbin@city.ac.uk. (59 pages)

3537. Families, Schools, and Primary School Learning: Evidence for Argentina and Colombia in an International Perspective

Ludger Wößmann and Thomas Fuchs
(March 2005)

This paper estimates the relationship between family background, school characteristics, and student achievement in primary school in two Latin American countries, Argentina and Colombia, as well as several comparison countries. The database used is the student-level international achievement data of the Progress in International Reading Literacy Study (PIRLS), which tested the reading performance of fourth-grade students in 2001. The nationally representative samples have 3,300 students in Argentina and 5,131 students in Colombia. The emerging general pattern of results is that educational performance is strongly related to students' family background, weakly to some institutional school features, and hardly to schools' resource endowments. In an international perspective, estimated family background effects are relatively large in Argentina, and relatively small in Colombia. A specific Argentine feature is the lack of performance differences between rural and urban areas. A specific Colombian feature is the lack of significant differences between gender performance. Nonnative students and students not speaking Spanish at home have particularly weak performance in both countries. But there are no differences by parental occupation and no positive effects of kindergarten attendance. In Argentina, students perform better in schools with a centralized curriculum and ability-based class formation.

This paper—a product of the Human Development Department, Latin America and the Caribbean Region—is part of a larger effort in the region to better understand the determinants of school quality. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Martha Vargas, room I7-162, telephone 202-458-4837, fax 202-522-0050, email address mvargas1@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Ludger Wößmann may be contacted at woessmann@ifo.de. (38 pages)

3538. American Depositary Receipt (ADR) Holdings of U.S.-Based Emerging Market Funds

Reena Aggarwal, Sandeep Dahiya, and Leora Klapper
(March 2005)

For a foreign "issuer," the benefits of cross-listing in the United States are extensively documented in the literature. However it is not clear what motivates "investors" to hold American Depositary Receipts (ADRs) rather than the underlying stock of these issuers. Aggarwal, Dahiya, and Klapper address the investors' choice to purchase local shares versus investing in ADRs. Specifically, they analyze the investment allocation decision of mutual fund managers to invest in emerging market firms that are listed in their domestic markets and have also issued ADRs in the United States. Although legal provisions (governance/investor protection) are typically assumed to affect ADRs and their underlying domestic shares equally, investors holding ADRs may have a higher level of legal protection as these securities are issued and traded in the United States. The authors' results are consistent with this "better legal protection" hypothesis as they find that funds prefer to hold ADRs rather than the underlying shares if the issuer is from a country with weak investor protection laws. Also, theoretical models of multiple trading exchanges predict that trading should tend to aggregate in the market with the lowest transaction costs. Similarly, the relative liquidity of an ADR compared to that of its underlying stock should also affect the funds' relative holding of the ADR versus the underlying stock. Consistent with this "ease of transaction" hypothesis the authors find that if an issuer is based in a country with a relatively small stock market, low level of trading volume, and high transaction costs, funds tend to hold a larger proportion of their investments in the ADR. Furthermore, funds hold a larger fraction of their investment in the ADR if the ADR trading volume is high relative to its domestic security trading volume. The results also suggest that ADR listings of local firms might not negatively affect local markets if the investment climate is good.

This paper—a product of the Finance Team, Development Research Group—is part of a larger effort in the group to study access to finance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mani Jandu, room MC3-456, telephone 202-473-3103, fax 202-522-1155, email address mjandu@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at aggarwal@georgetown.edu, sd@georgetown.edu, or lklapper@worldbank.org. (49 pages)

3539. A Model on Knowledge and Endogenous Growth

Derek H. C. Chen and Hiau Looi Kee
(March 2005)

Chen and Kee present a model of endogenous growth in which the main engine of economic development is knowledge. Using a two-sector closed economy model that comprises of a conventional goods-producing sector and a research and development sector, their model incorporates two key aspects of knowledge: technology and human capital. Steady-state equilibrium conditions show that the growth rate of per capita income hinges on the growth rate of human capital. While the growth rate of human capital has been previously shown to affect the growth of the economy *in transition* between steady states or balanced growth paths, the authors are the first to link the growth rate of human capital to the steady-state growth rate of productivity and output per worker. Furthermore, this result does not exhibit scale effects or policy invariance, both of which have been longstanding concerns with the predictions of endogenous growth models developed in the 1990s.

This paper—a product of the Knowledge for Development Program, World Bank Institute—is part of a larger effort in the institute to assess the effects of knowledge on economic development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Faythe Calandra, room J2-267, telephone 202-473-6440, fax 202-522-1492, email address fcalandra@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at dchen2@worldbank.org or hlkee@worldbank.org. (24 pages)